

Remarks

This amendment is responsive to the Office Action of May 9, 2002. Claims 1-21 remain for consideration.

1. Entry of the enclosed Amendment to the Drawing to correct reference sign 23 is hereby requested. Page 9 has been amended to refer to "Fig. 8". Therefore, the objection has been complied with.

2. Claims 1-2, 4, 5, 8, 9, 11-16, 18-21 are rejected as anticipated by Cheo. However, claim 1 requires "each core having an oblong cross section" (line 4); "a mode discriminating core characteristic selected from (c) index of refraction, (d) gain, and (e) cross sectional dimension...being greatest at the center of said single core and progressively lower toward the periphery of said single core...being greater than said characteristic of all others of said cores, said characteristic of each one of said other cores being lower than said characteristics of any of said cores that are closer to said central core than said one of said cores", (lines 21-23) thereby causing radiation in said cores to...transfer laser power coherently into a linearly polarized bright laser beam" (lines 11-21). None of the language quoted from claim 1 is disclosed in Cheo. Most of the quotation in the rejection refers to matters which are not recited and are therefore irrelevant. In any event, since all of the quoted matter is not disclosed in Cheo, and is not treated in the rejection in any fashion, reconsideration and allowance of claim 1 over Cheo is hereby respectfully requested.

Claim 2 requires "there being a modal discriminating core characteristic selected from (c) index of refraction, (d) gain, and (e) cross sectional dimension...being greatest at the center of said single core and progressively lower toward the periphery of said single core...in a fiber having additional cores, being greater than said characteristic of all others of said cores, said characteristic of each one of said other cores being lower than said characteristic of any of said cores that are closer to said central core than said one of said cores" (lines 6-15) and "thereby causing radiation in said cores to...transfer laser power coherently into

a bright laser beam...." (lines 16, 17), none of which is disclosed in Cheo or discussed in the rejection. Therefore, reconsideration and allowance of claim 2 is hereby respectfully requested.

Claims 4, 5, 8 and 9 depend from claim 2, are patentable for the same reasons and their allowance is hereby requested.

Claims 11-13 refer to the modal characteristics which are not disclosed in Cheo nor discussed in the rejection; therefore, these claims are patentable in their own right as well as from depending from patentable claim 2. Their allowance is hereby requested. Claim 14 requires "each core having an oblong cross section" (line 4); "additional cores disposed outwardly of said central core, oriented in an array along the line inclusive of the center of said cladding with their long axes perpendicular to said line and with an equal distance between the centers of adjacent cores" (lines 5-9); and "thereby to provide linearly polarized output laser beam" (line 10), none of which is disclosed in Cheo nor mentioned in the rejection. Therefore, reconsideration and allowance of claim 14 is hereby respectfully requested.

Claims 15 and 16 depend from allowable claim 14 and are patentable for the same reasons. Therefore, reconsideration and allowance of claims 15 and 16 is hereby requested.

Claim 18 requires "said cores having a characteristic selected from (a) index of refraction, (b) gain, and (c) cross sectional dimension, said characteristic of said central core being greater than said characteristic of all others of said cores, said characteristic of each one of said other cores being lower than said characteristic of any of said cores that are closer to said central core than said one of said cores" (lines 2-8) which is not disclosed in Cheo nor mentioned in the rejection. Furthermore, claim 18 requires "radiation in said cores to phase-lock and transfer laser power coherently to a bright laser beam of the fundamental in-phase supermode from all high order super modes belonging to the same array structure" (lines 9-12) which is not disclosed in Cheo nor mentioned in the rejection.

Therefore, claim 18 is patentable in its own right as well as being patentable for depending from allowable claim 14, so reconsideration and allowance thereof is hereby requested. Claim 19 requires "a plurality of cores, the center to center spacing of said cores is between 15 and 50 microns", which is not disclosed in Cheo nor mentioned in the rejection. Claim 19 is therefore patentable in its own right. With respect to claim 21, there is no column 18 in Cheo; there is no word "rectangular" in Cheo; there is nothing referring to rectangular or square cores in Cheo; there is nothing at line 44 of any column that has anything to do with claim 21. Claims 19-21 depend from allowable claim 14 and are therefore patentable; reconsideration and allowance of claims 19-21 is hereby respectfully requested.

3,4. Claims 6 and 10 are rejected as obvious over Cheo in view of Islam. Claim 6 requires "each core has an oblong cross section" (line 2) which is not shown in Cheo or Islam, and is not mentioned in the rejection. Claim 6 also requires "a plurality of cores oriented in an array along the line inclusive of the center of said cladding with their long axes perpendicular to said line and with an equal distance between the centers of adjacent cores" (lines 3-6) which is not shown in Cheo or Islam nor mentioned in the rejection. Claim 6 requires "a linearly polarized output laser beam" (line 7) which is not disclosed in Cheo or Islam and not mentioned in the rejection. In Islam, column 18, lines 16 and 17 refer to a fiber "can be spliced at 45° to the remainder of the cavity" which has nothing to do with the claimed subject matter herein. Column 18, lines 18-23 refer to a cladding-pumped fiber spliced at 45°, as well as to "a polarization maintaining fiber is inserted if the Sagnac loop is not polarization maintaining". This has nothing to do with the claimed subject matter. Column 18, lines 26-37 refer to wavelengths and cascaded Raman orders, none of which has anything to do with the claimed subject matter herein. The remaining lines, 40-51 is a portion of a Table relating to wavelengths of Raman orders having nothing to do with the claimed invention herein. Claim 6 is therefore patentable in its own right, as well as being patentable

for depending from allowable claim 2. Therefore, reconsideration and allowance of claim 6 is hereby requested.


Claim 10 depends from claim 2 and is patentable for the same reasons set forth hereinbefore, and its allowance is therefore requested. While it might be obvious to combine Cheo and Islam in some fashion, no such combination would have anything to do with the claimed subject matter herein.

Claim 17 is rejected as unpatentable over Cheo in view of Ventrudo et al (Ventrudo). The cited language, at column 4, line 22-49 of Ventrudo, describes how to combine and stabilize the output of two laser diodes. This is totally irrelevant to the claimed subject matter herein. Claim 17 depends from claim 14 and is allowable for the same reasons. Therefore, reconsideration and allowance of claim 17 over the references is hereby respectfully requested.

5. The descriptions of other references made of record and not relied upon make it clear that they are irrelevant to the claimed subject matter.

6. Should the foregoing not be persuasive, a telephone call is earnestly solicited.

Respectfully submitted,

  
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M. P. Williams  
Attorney of Record  
Phone: 860-649-0305  
Fax: 860-649-1385  
Email: [mel@melpat.com](mailto:mel@melpat.com)

210 Main Street  
Manchester, CT 06040

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